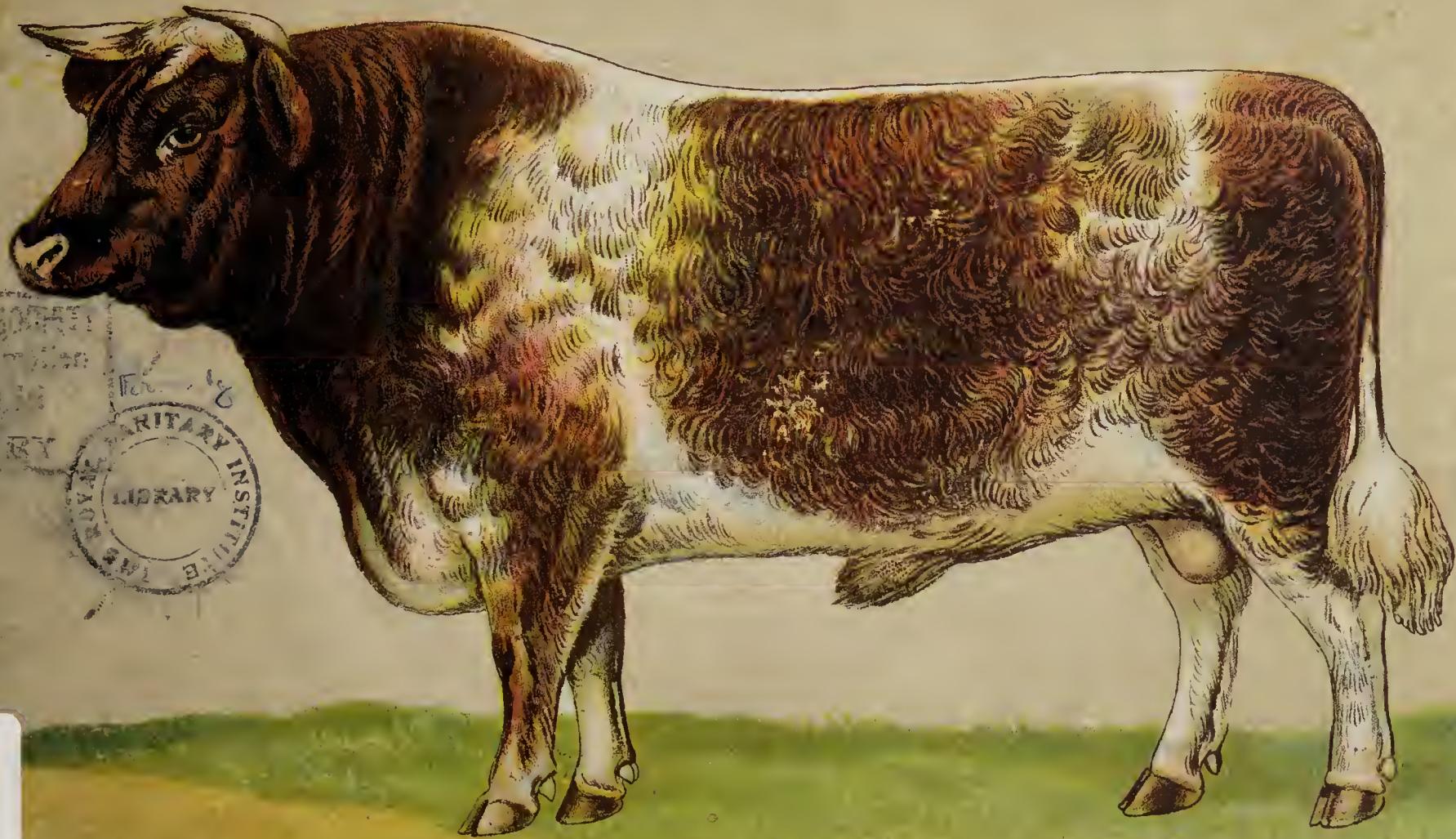


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ANATOMICAL MODEL OF THE BULL.

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SKELETON, ARTERIES & VEINS, MUSCLES, & MODELS OF THE INTERNAL ORGANS IN POSITION.



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„ III. ARTERIES AND VEINS.

„ IV. MUSCLES.

„ V. INTERNAL ORGANS.

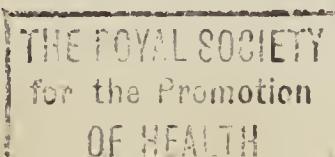
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KEY TO THE MODEL OF THE BULL.

PLATE I.—DIVISIONS OF THE BODY OF THE BULL.

HEAD.

1. Nose.
2. Nostrils.
3. Lower lip, chin.
4. Bridge of nose.
5. Forehead.
6. Frontal crest.
7. Horns.
8. Throat.
9. Eye.
10. Ears.
11. Jaws.

NECK.

12. Nape.
13. Crest.
14. Oesophagus.
15. Dewlap.

TRUNK.

16. Withers.
17. Back.
18. Wall of chest.
19. Front breast.
20. Lower Breast.
21. Belly.
22. Loins.
23. Flanks.
24. Upper part of flank.

25. Rump.
26. Croup.
27. Root of tail.
28. Tail.
29. Tuft.
30. Scrotum.
31. Prepuce.

FORE LIMBS.

32. Shoulder.
33. Point of shoulder.
34. Fore-arm.
35. Elbow.
36. Knee.
37. Shin (metacarpal).
38. Fetlock joint.
39. Dew-claws.
40. Pastern.
41. Coronet.
42. Hoofs.

HIND LIMBS.

43. Upper thigh.
44. Hip-joint.
45. Stifle-joint.
46. Lower thigh.
47. Tibia and Fibula.
48. Point of hock.
49. Hock.

DIVISIONS OF THE BODY OF THE BULL—*Continued.*

50. Metatarsal.
51. Pastern.

52. Coronet.
53. Hoofs.

PLATE II.—THE SKELETON.

HEAD

1. Left nasal bone.
2. Lower or under jaw.
3. Occipital bone.
4. Frontal protuberance.
5. Horn cores.
6. Frontal-bone.
7. Lachrymal bone.
8. Malar bone.
9. Zygomatic bone.
10. Right nasal bone.
11. Great maxillary bone.
12. Six upper molars.
13. Small maxillary bone.
14. Temporal bone.
15. Orbital cavity.
- In the lower jaw (2) are:
16. The 6 lower molars. (Six on each side = 12.)
17. The 8 incisors.

TRUNK.

- 18-24. 7 cervical vertebræ, the first is:

18. The atlas, and the second:
19. Dentata.
- 25-37. 13 dorsal vertebræ, with
1'-13'. The ribs, of which:
1'-8' are called true ribs, and
9'-13'. False ribs.
The first eight extend to
38. The breast-bone or sternum.
- 39-44. The 6 lumbar vertebræ.
45. The sacrum.
- 46-65. 20 coccygeal vertebræ;
the number of these
varies from 18-20.

- 66-68. Bones of the pelvis.

66. Ilium.
67. Ischium.
68. Os pubis.

69. Hip joint.

LIMBS.

70. Shoulder blade.
71. Point of shoulder.
72. Upper arm bone (Humerus).
73. Elbow-bone (Ulna).

KEY TO THE COLOURED PLATES. (BULL)

THE SKELETON—Continued.

74. Fore-arm bone or radius.
75. Elbow-joint.
76. Knee joint, consisting of:
77. Pisiform bone.
78. Trapezoid bone.
79. Cuneiform bone.
80. Scaphoid bone.
81. Semi-lunar bone.
82. Unciform.
83. Metacarpal.
84. Splint bone.
85. Sesamoid bones.
86. Suffragines or long pastern bones.
87. Coronæ or short pastern bones.
88. Os pedes or coffin bones.

89. Navicular bones.
90. Femur (thigh bone).
91. The tibia. (The fibula is rudimentary.)
92. Patella.
93. Stifle joint.
94. Hock; this comprises:
95. Calcis (heel bone).
96. Astragalus
97. Scaphoid.
98. First cuneiform bone.
99. Second and third cuneiform bones.

From the hook downwards, the bones are the same as on the fore limbs.

PLATE III.—CIRCULATION OF THE BLOOD.

Abbreviations: *H.* Heart, *I.* Trachea, or Windpipe, *S.* Oesophagus (breast portion), *L.* Liver, *M.* Stomachs, *R.V.* Right fore leg, *L.V.* Left fore leg, *R.H.* Right hind leg, *L.H.* Left hind leg, *Mz.* Spleen.

The arteries are traced in red and the veins in blue.

A. ARTERIES.

1. The Aorta.
2. Left coronary of the heart.
3. Anterior aorta.
4. Posterior aorta.
5. Left innominate artery (section).
6. Right innominate artery, giving off:
7. The common carotid artery.
8. The left carotid artery, and
9. The trachea.
10. Branches for the windpipe, oesophagus, the neighbouring muscles, also

11. The interior parotid gland artery, and
12. The upper thyroid artery.
13. The pharyngeal artery. At the parotid gland, the carotid arteries divide into:
14. The occipital artery (first portion only visible).
15. The facial.
16. The internal maxillary artery, hidden under parotid gland.
17. The lingual artery.
18. Sub-maxillary.
19. Branches of the external maxillary to upper and lower lip.
20. Branches of the external maxillary to upper and lower lip.

CIRCULATION OF THE BLOOD—Continued.

- From the inner maxillary artery rise and are seen:
21. The temporal artery with its branches.
22. The lower dental artery.
23. The lateral nasal artery.
24. The lower eyelid artery and artery in bridge of nose.
- From the right innominate artery (9) come:
25. The anterior intercostal artery (section).
26. The oblique cervical artery.
27. Deep cervical artery.
28. The vertebral artery.
29. The inner pectoral artery.
30. The oblique shoulder artery (not visible).
31. The outer pectoral artery, and
32. The axillary artery (not visible).
33. Ulnar.
34. Radial.
35. Small metacarpal artery.
36. Large metacarpal artery.
37. Small metacarpal artery.
38. Anterior digital.
39. Semi-lunar anastomosis.
40. Circumflex artery of coronary cushion.
41. The oesophageal artery.
42. The bronchial artery.
43. 10 pairs of intercostal arteries.
44. The posterior diaphragmatic arteries.
45. The celiac axis.
46. The anterior mesenteric artery.
47. Arteries of the kidneys.
48. The internal spermatic arteries.
49. Circumflex iliac.
50. The six pairs of lumbar arteries.
51. Arteries of the thigh.
52. The two pelvic arteries.
53. The middle sacral artery.
54. The posterior mesenteric.
55. Branch posterior tibial.
56. The artery of the abdominal integument.
57. The deeper femoral artery.
58. The external circumflex artery.
59. Posterior tibial artery.
60. Anterior tibial artery.
61. Posterior tibial artery.
62. Anterior tibial artery.
63. Small metatarsal artery.
64. Large tarsal artery.
65. Plantar artery.
66. Umbilical artery.
67. The ilio-lumbar arteries.
68. The tail arteries.
69. The muscular (gluteal) arteries.
70. The obturator artery.
71. Internal pudic artery.
72. The sciatic artery.
73. The pulmonary artery.

B. VEINS.

74. The anterior vena cava.
75. Jugular veins.
76. The posterior vena cava.
78. The veins of the liver.
79. Capillary network system to the portal vein.
80. Portal vein.

KEY TO THE COLOURED PLATES. (BULL)

PLATE IV.—THE MUSCLES.

1. Levator labii superioris alæque nasi.
2. Zygomaticus.
3. Proper elevator of the upper lip.
4. Dilator naris lateralis.
5. Lachrymalis.
6. Depressor muscle of the upper lip.
7. Masseter.
8. Sterno maxillaris (maxillary portion).
9. Its sinew touching on the branch of the lower jaw.
10. Orbital cavity part of the circular muscle of the eyelid.
11. Eyelid portion of the same.
12. Superior | Adductors of the
13. Middle | ear.
14. Inferior |
15. Abductor muscle of the ear.
16. Cervical portion } of the muscles com-
17. Mastoid portion } mon to
18. Arm portion } head, neck, and arm.
19. Clavicular strip.
20. Mastoid portion of the sterno-maxillary muscle.
21. Superficial or broad pectoral muscle.
22. Posterior and } of the neck- band shoul-
23. Anterior portion } der muscle.
24. Lower elevator of the shoulder bone.
25. Trapezius (posterior acromial muscle).
26. Trapezius (its insertion tendon).
27. Anterior
28. Posterior | brachial exten-
29. External | sor.
30. Thick
31. Long
32. Scapulo ulnaris.
33. Latissimus dorsi.
34. Extensor oblique of abdomen.
35. Serratus magnus.
36. Pectoralis major.
37. Extensor of metacarpus.
38. Common extensor of the digits.
39. Extensor of external digit.
40. External flexor of metacarpus.
41. Flexor of foot.
42. Oblique extensor of metacarpus.
43. Tendon.
44. Deep flexor of toes.
- 45.
- 46.
47. Tendons.
- 48.
- 49.
50. Tendon of extensor of foot.
51. Annular ligament of fetlock.
52. Superficial gluteus.
- 53.
54. Tensor vaginæ femoris.
55. Rectus femoris.
56. Biceps femoris.
57. Posterior portion of biceps.
58. Semitendinosus.
59. Semi membranosus.
60. Curvator of tail.
61. Long flexor of tibia.
62. Long extensor of foot.
63. Short peroneus.
64. Long peroneus.
65. Tendon of short peroneus.
66. Ligaments.
67. Tendon of peroneus.
68. Internal gemellus or gastrocnemius.
69. Extensor metatarsi.
70. Tendo Achilles.

PLATE V.—INTERNAL ORGANS, AND PART OF AN OBLIQUE SECTION OF THE BODY.

1. Cerebrum.
2. Cerebellum.
3. Pons varolii.
4. Medulla oblongata.
5. Spinal marrow.
6. Section of cervical-dorsal-lumbar, sacral and coccygeal vertebræ.
7. Ligamentum nuchæ.
8. Turbinated bones.
9. Pharynx.
10. Entrance to larynx.
11. Windpipe or trachea.
12. Thyroid gland.
13. Bronchi and their division in lungs.
14. Left lung.
15. Right lung.
16. Wall of pectoral cavity from inside.
17. Tendinous portion of the Diaphragm.
18. Muscular part of same.
19. Left ventricle.
20. Right ventricle.
21. Pulmonary artery.
22. Aorta.
23. Right auricle from within.
24. Right ventricle from within.
25. Left auricle from within.
26. Left ventricle from within.
27. Chordæ, tendinous fibres of the valves.
28. Semi-lunar valve of the pulmonary artery in the right ventricle.
29. Auriculo-ventricular valve.
30. Columnæ carneæ.
31. Cavity of the mouth with the grinders.
32. Tongue.
33. Palate with its ridges.
34. Pharynx.
35. Cervical and pectoral portion of the œsophagus.
36. First stomach.
37. Its left or upper bag.
38. Its right or lower bag.
39. Pillars of the paunch.
40. Paunch papillæ.
41. Opening of the œsophagus.
42. Fore }
43. Middle } division of the
44. Back } paunch.
45. Spleen.
46. Opening into the second stomach.
47. Second stomach.
48. Its meshes or cells.
49. Third stomach.
50. Its leaves.
51. Fourth stomach.
52. Its folds of mucous membrane.
53. Pylorus.
54. Duodenum.
55. Mesentary.
56. Jejunum.
57. Ilium.
58. Its discharging into cæcum.
59. Cæcum.
60. Colon.
61. Rectum.
62. Anus.
63. Liver.
64. Left. } lobes of the liver.
65. Right }
66. Spigeliani.
67. Polygalan.
68. Gall-bladder.
69. Biliary ducts of liver.
70. Biliary duct of gall bladder.

KEY TO THE COLOURED PLATES. (BULL)

INTERNAL ORGANS, &c.— *Continued.*

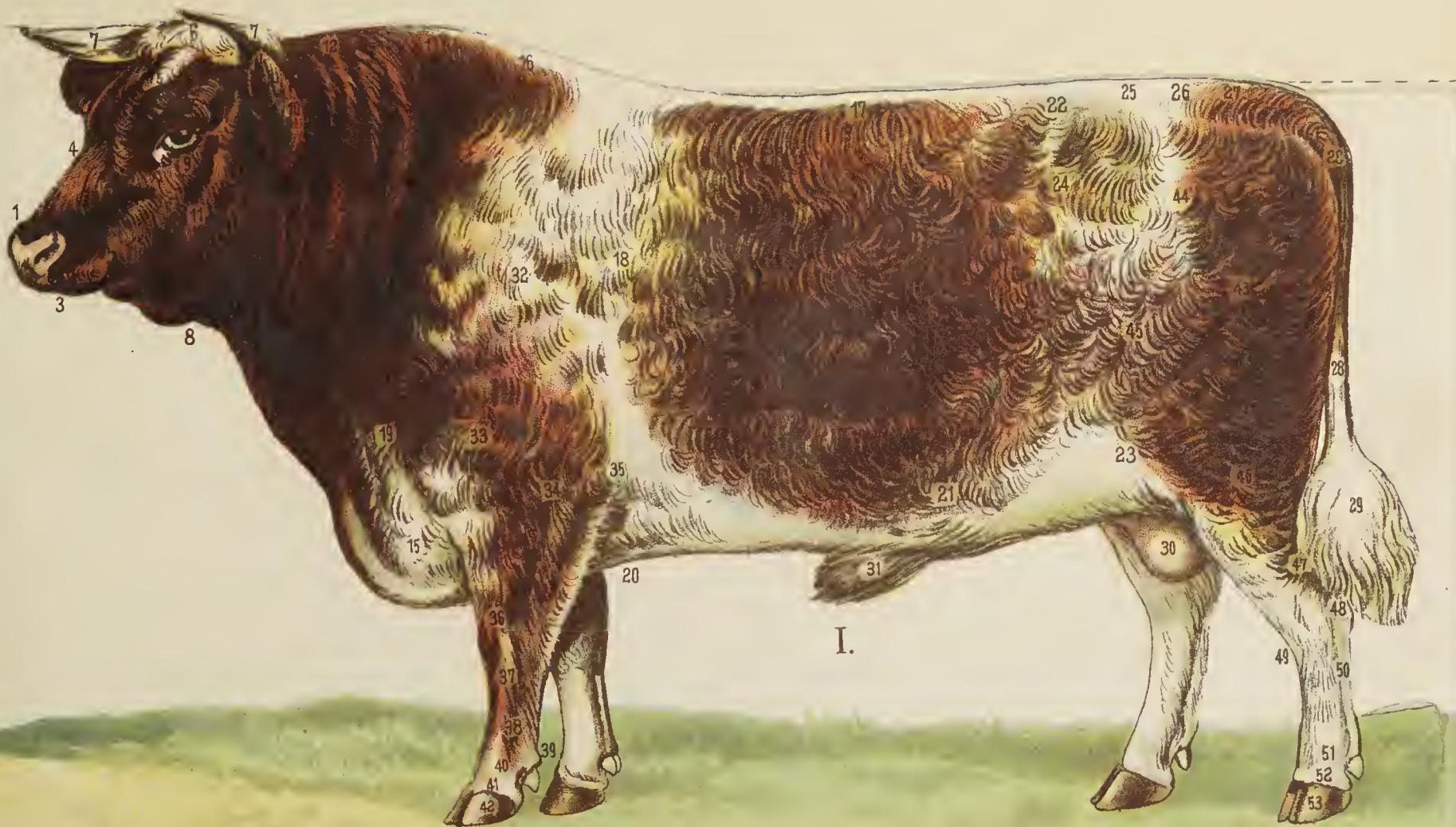
- 71. Common biliary duct.
- 72. Entrance of posterior vena cava.
- 73. Mouth of portal vein.
- 74. Right and left broad ligaments of the liver.

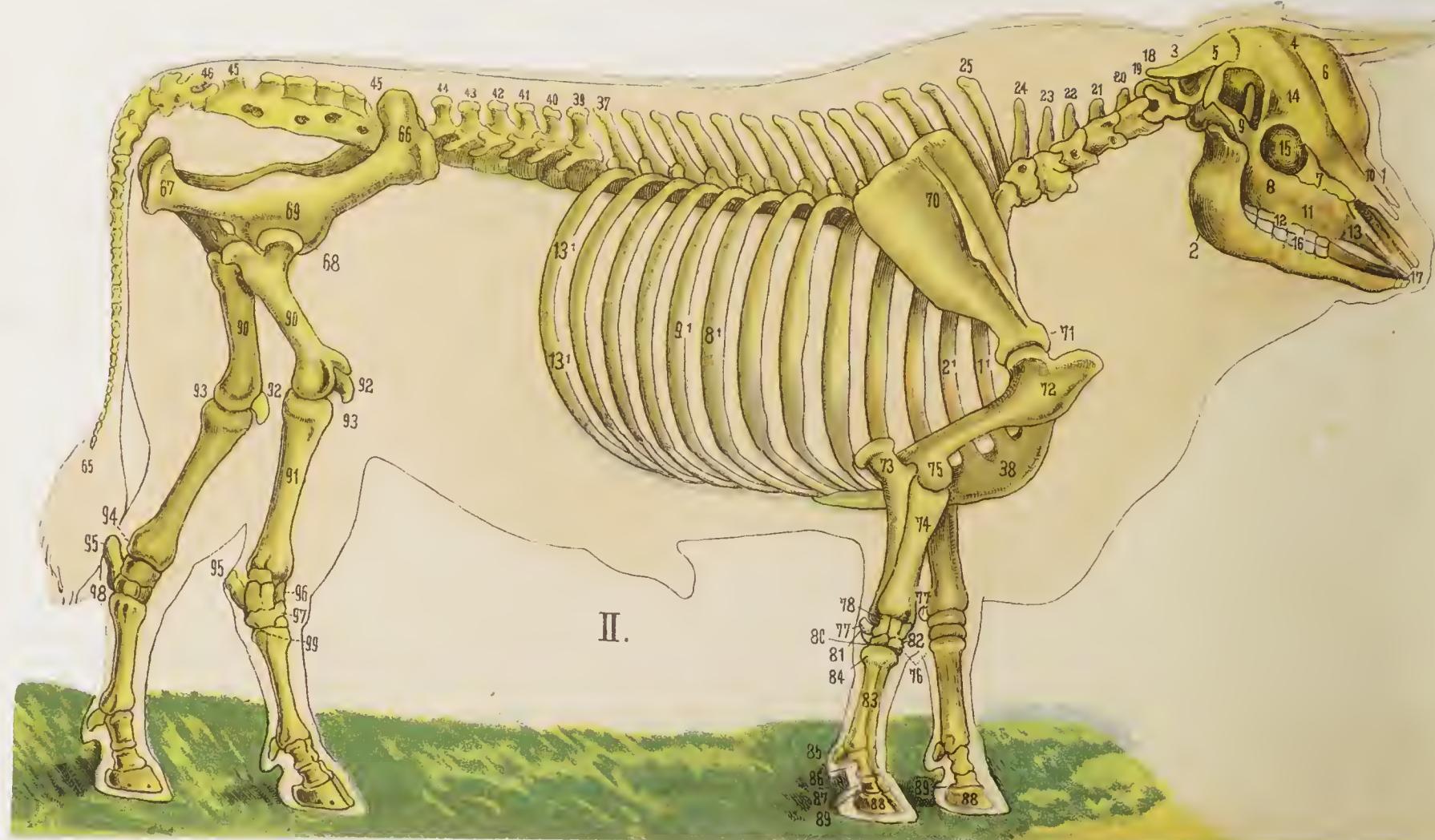
- 75. Left kidney.
- 76. Section of this.
- 77. Right kidney.
- 78. Ureter, going from the kidney basin and leading to :

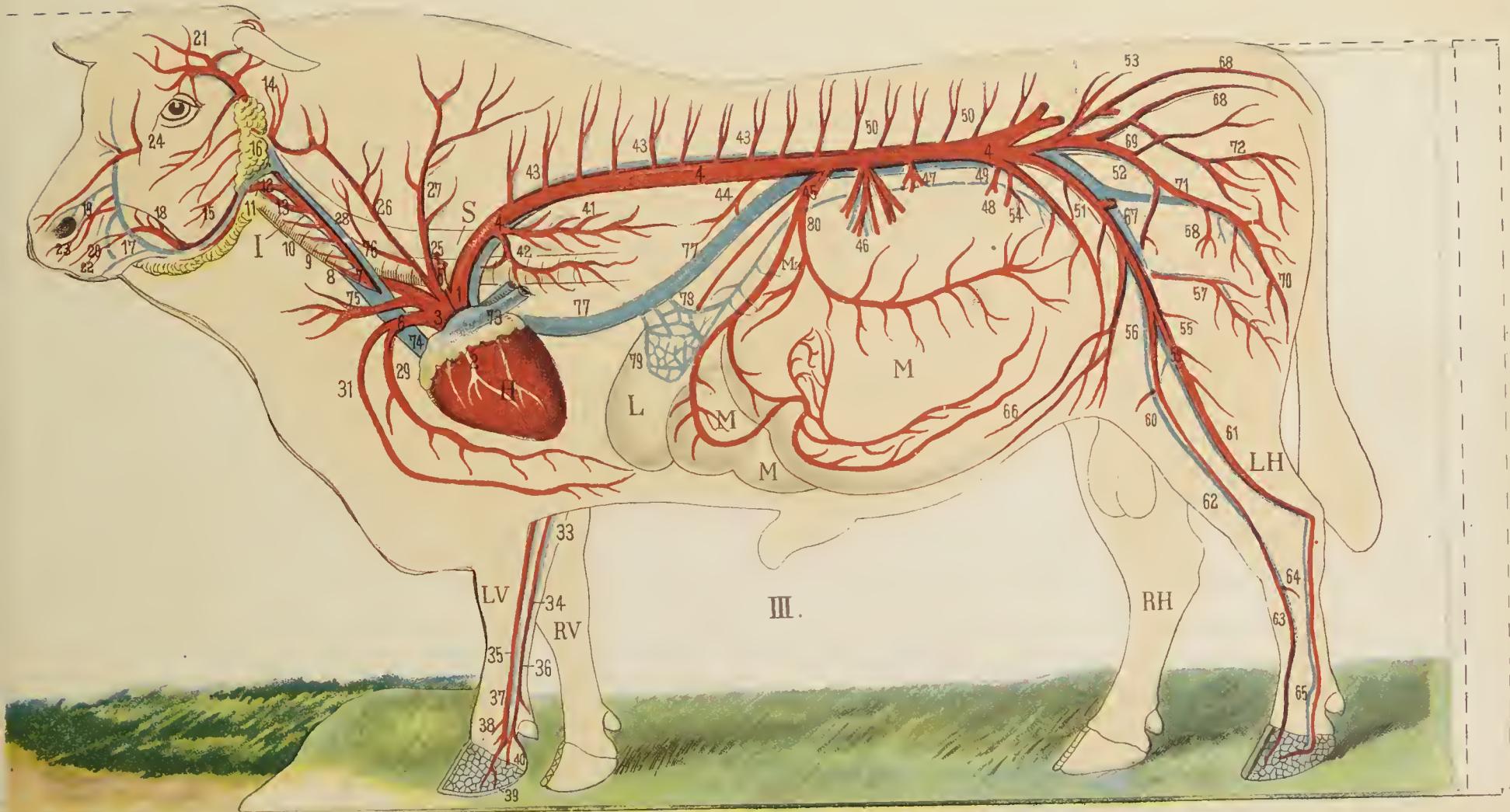
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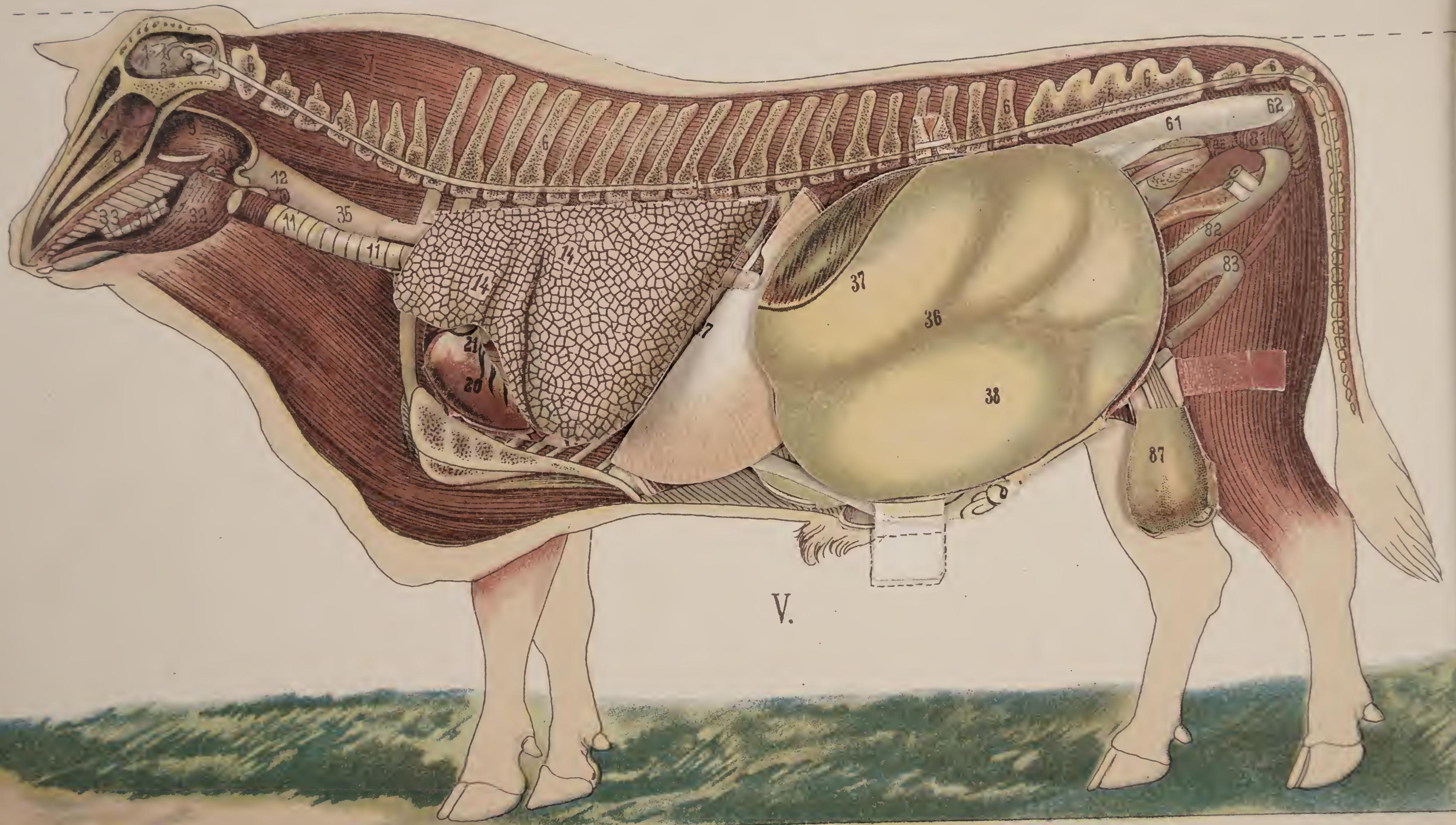
- 79. The bladder.
- 80. Neck of bladder.
- 81. Meatus of bladder.
- 82. Urethra.
- 83. S-bend of the penis.
- 84. Glans penis.
- 85. Prepuce.
- 86. Spermatic ducts.
- 87. Scrotum from without.
- 88. Testicles.
- 89. Epididymus.
- 90. Abdominal cavity.

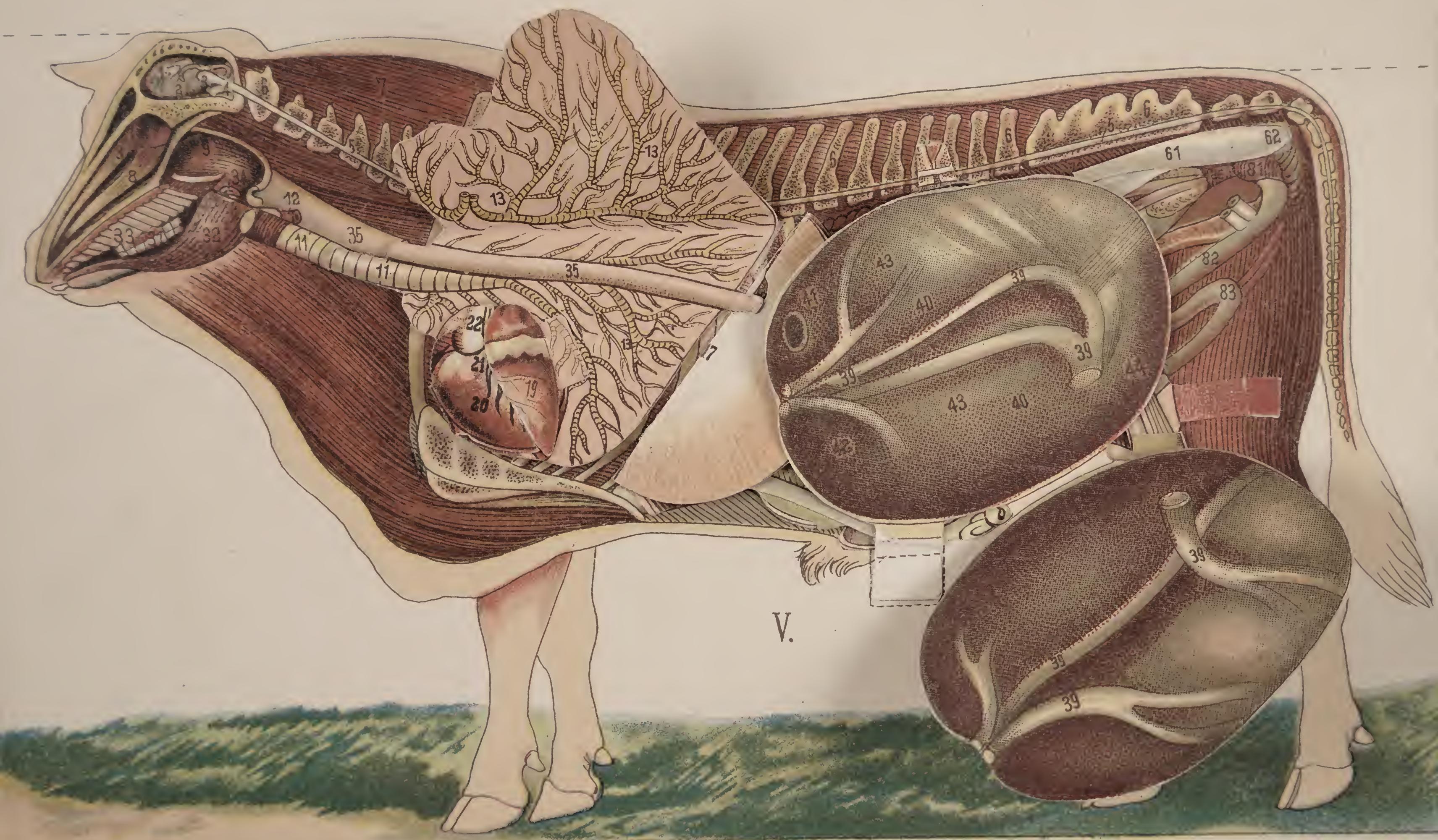




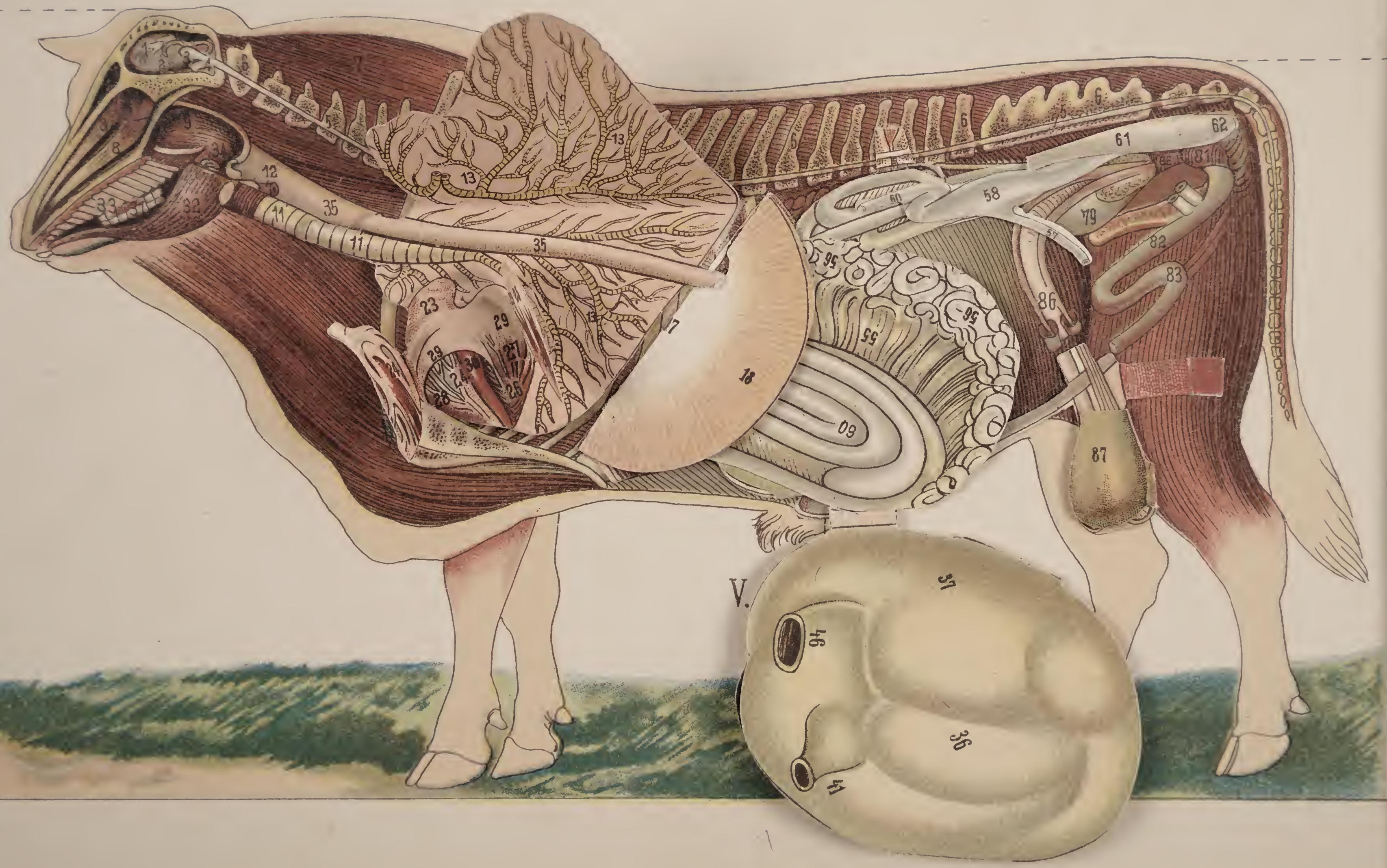


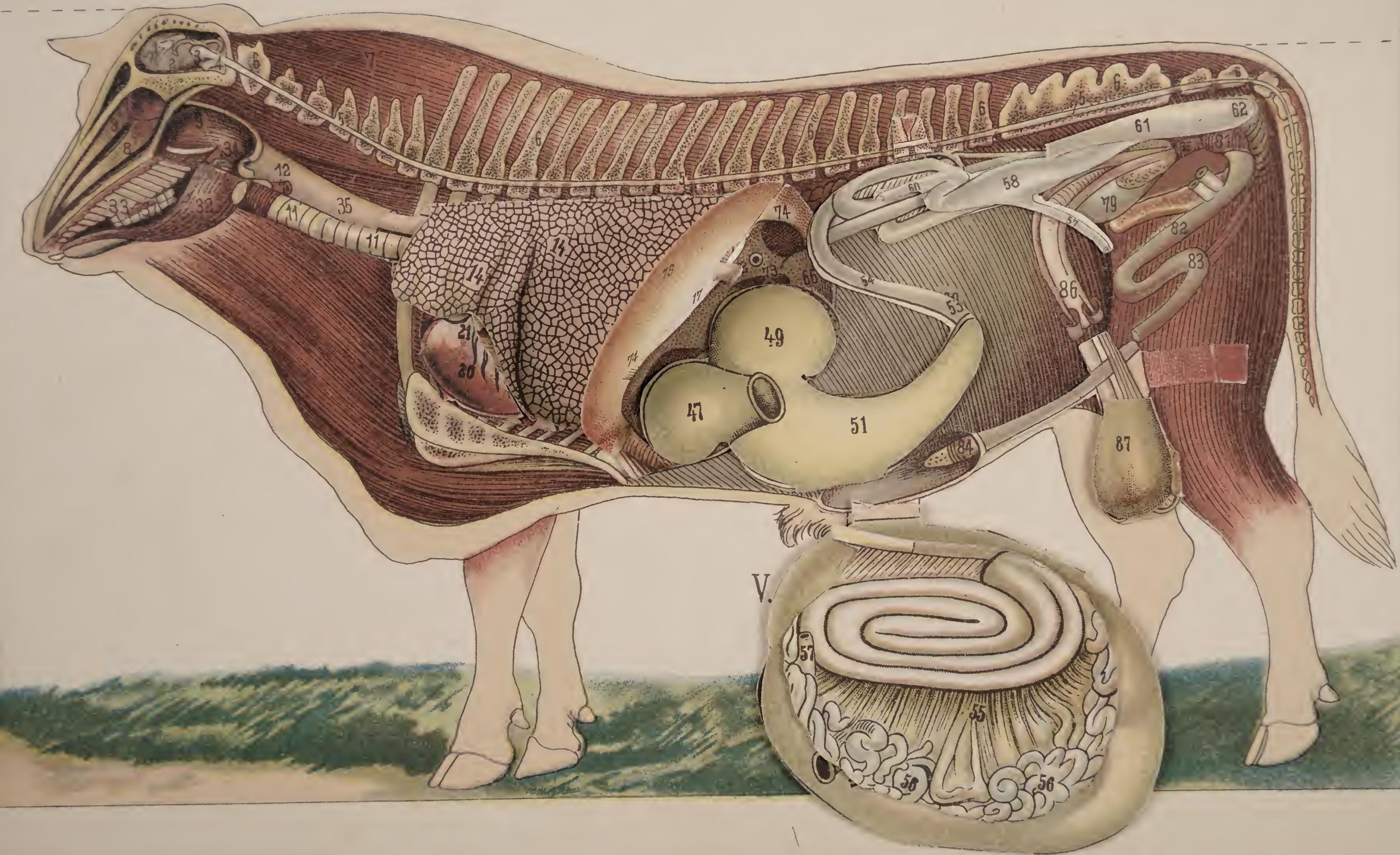


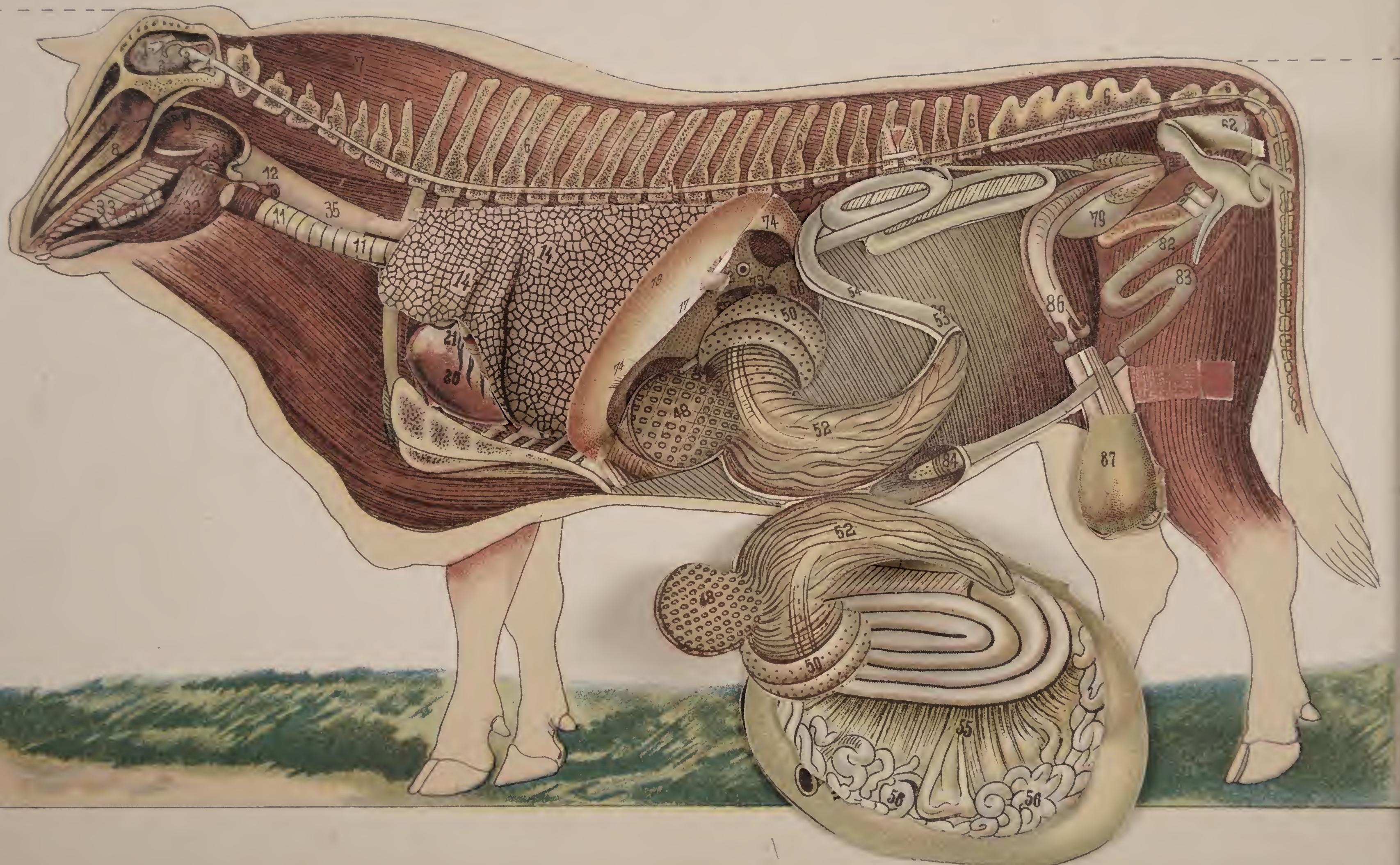


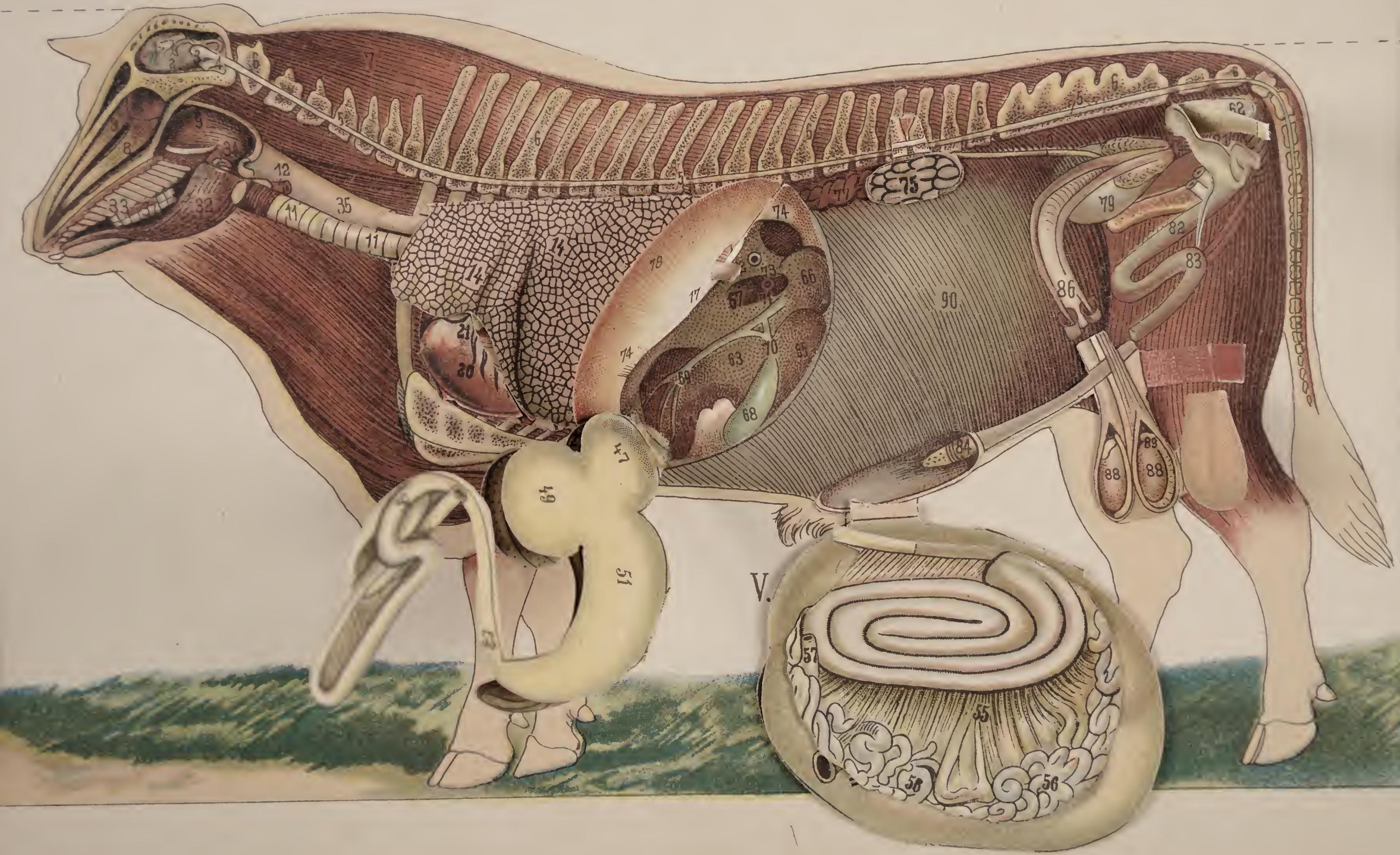


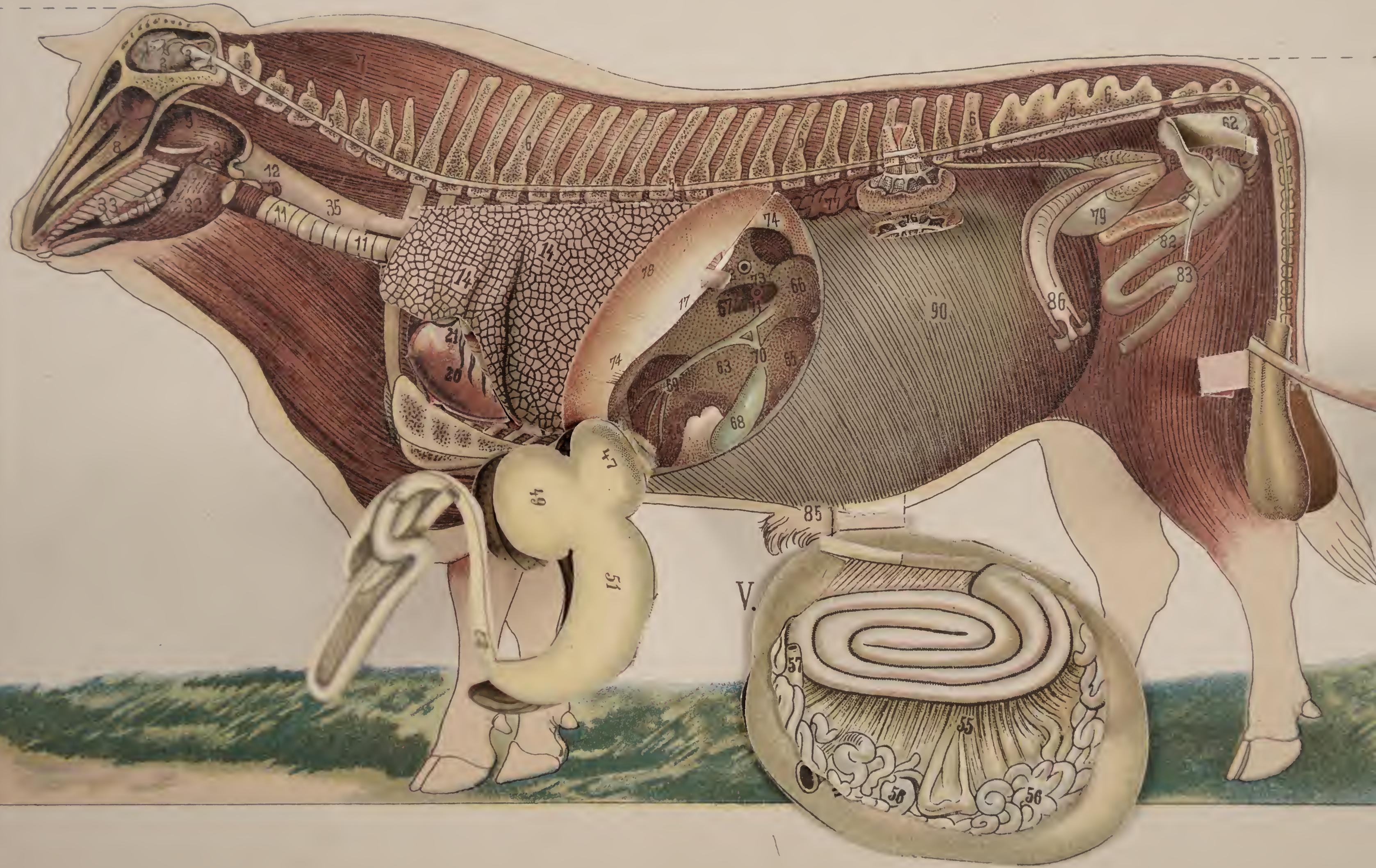
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